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| DICKSTEIN SHAPIRO LLP 1177 AVENUE OF THE AMERICAS (6TH AVENUE) NEW YORK, NY 10036-2714 | | | EXAMINER MAI, TAN V | |
| | | | ART UNIT 2193 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/784,820

Applicant(s)

YIP ET AL.

Examiner

Tan V. Mai

Art Unit

2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/24/04</u> . | 6) <input type="checkbox"/> Other: _____ |

1. Claims 1-12 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per independent claim 1, the phrases "alternative correlator coefficients" are not understood. Similarly noted claim 19 "alternative correlators".

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims recite a method / apparatus for performing a mathematical function. It is noted that apparatus claims 13-21 recite "means plus function" features. It is unclear the claimed apparatus is implemented by hardware or software.

"[t]o satisfy section 101 requirements, the claim must be for a practical application of the Sec. 101 judicial exception, which can be identified in various ways:

- . The claimed invention "transforms" an article or physical object to a different state or thing.
- . The claimed invention otherwise produces a useful, concrete and tangible result,...".

See "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" OG Date: 22 November 2005.

In order for claims to be statutory, claims must include a practical application with a **concrete, useful, and tangible result**. However, claims 1-23 merely disclose means / steps of performing mathematical function without disclosing a practical application with a concrete, useful, and tangible result, as they are pre-emptive in any application. Therefore, claims 1-23 are directed to non-statutory subject matter.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 5-7, 9, 11-12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Zhou et al.

Zhou et al teach, e.g., see Figs. 5-6 and 8, the claimed combination elements. The circuits comprise sampling complex signal (x, y), multiplication elements for scaling and addition elements for combining.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-3, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou et al.

Zhou et al have been discussed in paragraph # 4 above.

As per claim 2, the claim adds " wherein a correlator coefficient value of 0 for a signal sample is implemented in the scaling step by not using the signal sample in the

combining step". The feature is obvious to a person having ordinary skill in the art to save power consumption.

As per claim 3, the claim adds "wherein a correlator coefficient value of -1 for a signal sample is implemented in the scaling step by inverting the signal sample in the combining step". The feature is obvious to a person having ordinary skill in the art to "inverting" either the signal sample" or the "scaling" result.

As per claim 10, the claim adds " wherein the integer n is chosen from the group consisting of 0, 1, and 2". The feature is obvious design choice.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to design the claimed invention according to Zhou et al's teachings because the filter is a complex filter as claimed.

7. Claims 4, 8 and 13-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou et al in view of Miron et al (Applicants' admission Prior Art).

Zhou et al have been discussed in paragraph # 4 above.

Miron et al disclose a "multiplierless" digital FIR filter.

As per claim 4, the claim adds "wherein a correlator coefficient value of 0.5 for a signal sample is implemented in the scaling step by shifting the signal sample in a shift register prior to the combining step". Miron et al disclose show the "shifting" feature.

As per claim 8, the claim adds " wherein the sequence of alternative correlator coefficients are members of the group consisting of ... ". The feature is obvious design choice.

As per independent claim 13, the claim adds "shifting" feature. Miron et al disclose show the "shifting" feature.

As per claim 14, the claim adds "wherein the means for handling a first stream is a shift register that stores finite-precision numbers". Zhou et al show shifters (61, 68).

As per claim 15, the claim adds "wherein furthermore, the apparatus is a part of a receiver compliant with the IEEE 802.11a WLANs or HIPERLAN/2 specifications". The proposed combined device of Zhou et al in view of Miron et al could use in such device.

As per claim 16, the claim adds "wherein furthermore, the at least one second computing means receives as input, outputs from two first computing means, each first computing means in turn, receiving its input from a distinct stream from the plurality of streams of signal samples". Zhou et al's complex filter shows the claimed feature.

As per claim 17, the claim adds " wherein furthermore, the plurality of streams of signal samples correspond to an imaginary signal sample stream and a real signal sample stream for a complex signal ". Zhou et al's complex filter shows the claimed feature.

As per claim 18, the claim adds "wherein furthermore, the at least one first computing means is selected from the group consisting of a 5-input-1-output computing means, a 7-input-1-output computing means, and a 9-input-1-output computing means". The feature is obvious design choice.

As per claim 19, the claim adds "wherein furthermore, the first correlation result corresponds to alternative correlators selected from correlator set ... ". The feature is obvious design choice.

As per claim 20, the claim adds " the first correlation result is generated in real time". Zhou et al 's complex filter can provide the claimed feature.

As per claim 21, the claim adds " wherein furthermore, the at least one first computing means and the at least one second computing means do not carry out multiplication operations ". Miron et al show "multiplierless" feature.

As per independent claim 22, the claim adds " selecting a 16-point waveform... ".
". The feature is obvious design choice.

As per claim 23, the claim adds "wherein the at least one other signal sample is scaled prior to the processing step". Miron et al show "multiplierless" feature which provides the equivalent feature.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Miron et al's "multiplierless" feature in Zhou et al, thereby making the claimed invention, because the filter is a complex filter having "multiplierless" feature as claimed.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cited references are art of interest.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan V. Mai whose telephone number is (571) 272-3726. The examiner can normally be reached on Mon-Wed and Fri. from 9:30am to 2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

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supervisor, Meng-Ai An, can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is:

Official (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.



Tan V. Mai
Primary Examiner